

- 63 -

Related Pending Application

Related Case Serial No: 09/771,883

Related Case Filing Date: 01-30-01

WHAT IS CLAIMED IS

RECEIVED

AUG 13 2001

Technology Center 2300

5

1. An image forming device management system in which a data communication device is connected to one or a plurality of image forming devices and a central control system is connected to the data communication device via a public switched telephone network and provides a remote maintenance of the one or the plurality of image forming devices through the telephone network and the data communication device, the image forming device management system comprising the one or the plurality of image forming devices, the data communication device, and the central control system,

15

wherein each image forming device comprises a power-source on/off control unit automatically turning on, when a communication request signal sent by the data communication device is received by the image forming device, a supplying of a power from a main power source to the image forming device concerned, and the power-source on/off control unit automatically turning off the supplying of the power from the main power source to the image forming device after a communication between the data communication device and the image forming device ends.

20

25

2. The image forming device management system according to claim 1, wherein the power-source on/off control unit of each image forming device is configured to automatically turn off the supplying of the power when the image forming device satisfies predetermined power-off conditions after the end of the communication between the data communication device and the image forming device.

10

3. The image forming device management system according to claim 1, wherein the power-source on/off control unit of each image forming device is configured such that the power-source on/off control unit determines that the image forming device satisfies power-off conditions, when a given time period has elapsed after the end of the communication, and that the power-source on/off control unit automatically turns off the supplying of the power in accordance with the determination.

20

4. The image forming device management system according to claim 1, wherein the power-source on/off control unit of each image forming device is configured such that the power-source on/off

25

control unit determines that the image forming device satisfies power-off conditions, when a given time period has elapsed after the end of the communication with the image forming device staying in an inactive condition, and that the power-source on/off control unit  
5 automatically turns off the supplying of the power in accordance with the determination.

10

5. The image forming device management system according to claim 1, wherein each image forming device further comprises a signal send-back unit sending, during a period from a time the supplying of the power started by the power-source on/off control  
15 unit to a time an initialization of the image forming device ends, one of an idle-state signal and an inaccessibility signal to the data communication device in response to an inquiry signal from the data communication device.

20

6. The image forming device management system according to claim 1, wherein each image forming device further comprises a  
25 power-supplied portion setting unit setting, in advance, any of a

plurality of portions of the image forming device as being power-supplied portions to which the power from the main power source is to be supplied, such that the power-source on/off control unit automatically turns on, when the communication request signal is received by the image forming device, the supplying of the power from the main power source to only the power-supplied portions of the image forming device.

10

7. The image forming device management system according to claim 6, wherein the data communication device comprises a power-supplied portion selection unit transmitting a power-supplied portion selection signal to the image forming device concerned, so that any of the plurality of portions of the image forming device concerned are selected, in advance, in accordance with the power-supplied portion selection signal as being the power-supplied portions, and the power-source on/off control unit of the image forming device concerned automatically turning on, when the communication request signal is received by the image forming device concerned, the supplying of the power from the main power source to only the power-supplied portions of the image forming device concerned.

25

8. The image forming device management system according to claim 6, wherein each image forming device further comprises a power-supplied portion display unit displaying, on an operation/display portion, power-supplied portion information that indicates which of the portions of the image forming device are set  
5 as being the power-supplied portions.

10

9. The image forming device management system according to claim 1, wherein the power-source on/off control unit of each image forming device automatically turns on, when a selecting signal, which is sent by the data communication device and designates the  
15 image forming device concerned as a destination device, is received by the image forming device concerned, the supplying of the power from the main power source to the image forming device concerned.

20

10. A data communication device for use in an image forming device management system, the data communication device being connected to one or a plurality of image forming devices and a  
25 central control system being connected to the data communication

device via a public switched telephone network and providing a remote maintenance of the one or the plurality of image forming devices through the telephone network and the data communication device,

5           the data communication device comprising a request signal transmission unit transmitting a communication request signal to the image forming device concerned among the one or the plurality of image forming devices, and

10           the image forming device concerned automatically turning on, when the request signal is received by the image forming device concerned, a supplying of a power from a main power source to the image forming device concerned.

15

11. The data communication device according to claim 10, wherein the request signal transmission unit transmits a selecting signal, which designates the image forming device concerned as a destination device, to the one or the plurality of image forming devices.

25

12. The data communication device according to claim 10,  
wherein the data communication device comprises an inquiry signal  
transmission unit transmitting an inquiry signal to the image forming  
device concerned in response to one of an idle-state signal and an  
5 inaccessibility signal that is sent by the image forming device  
concerned during a period from a time the image forming device  
concerned starts the supplying of the power to a time an  
initialization of the image forming device concerned ends.

10

13. The data communication device according to claim 10,  
wherein the data communication device comprises a power-supplied  
15 portion selection unit transmitting a power-supplied portion  
selection signal to the image forming device concerned, so that any  
of a plurality of portions of the image forming device concerned are  
selected, in advance, in accordance with the power-supplied portion  
selection signal as being power-supplied portions to which the power  
20 from the main power source is to be supplied, and

the image forming device concerned automatically turning on,  
when the communication request signal is received by the image  
forming device concerned, the supplying of the power from the main  
power source to only the power-supplied portions of the image  
25 forming device concerned.

14. The data communication device according to claim 13,  
wherein the power-supplied portion selection unit is configured to  
contain the power-supplied portion selection signal in an internal  
parameter request signal with respect to the image forming device  
5 concerned, and transmit the internal parameter request signal,  
containing the power-supplied portion selection signal, to the image  
forming device concerned, so that the image forming device  
concerned simultaneously receives both the internal parameter  
request signal and the power-supplied portion selection signal.

10

15 15. An image forming device for use in an image forming  
device management system wherein a data communication device is  
connected to the image forming device and a central control system  
is connected to the data communication device via a public switched  
telephone network and provides a remote maintenance of the image  
forming device through the telephone network and the data  
20 communication device,

the image forming device comprising:

a power-source on/off control unit automatically turning on,  
when a communication request signal sent by the data  
communication device is received by the image forming device, a  
25 supplying of a power from a main power source to the image forming



device concerned; and

the power-source on/off control unit automatically turning off  
the supplying of the power from the main power source to the image  
forming device after a communication between the data  
5 communication device and the image forming device ends.

10 16. The image forming device according to claim 15, wherein  
the power-source on/off control unit is configured to automatically  
turn off the supplying of the power when the image forming device  
satisfies predetermined power-off conditions after the end of the  
communication between the data communication device and the  
15 image forming device.

20 17. The image forming device according to claim 15, wherein  
the power-source on/off control unit is configured such that the  
power-source on/off control unit determines that the image forming  
device satisfies power-off conditions, when a given time period has  
elapsed after the end of the communication, and that the power-  
25 source on/off control unit automatically turns off the supplying of

the power in accordance with the determination.

5

18. The image forming device according to claim 15, wherein the power-source on/off control unit is configured such that the power-source on/off control unit determines that the image forming device satisfies power-off conditions, when a given time period has elapsed after the end of the communication with the image forming device staying in an inactive condition, and that the power-source on/off control unit automatically turns off the supplying of the power in accordance with the determination.

10

15

19. The image forming device according to claim 15, further comprising a signal send-back unit sending, during a period from a time the power-source on/off control unit starts the supplying of the power to a time an initialization of the image forming device ends, one of an idle-state signal and an inaccessibility signal to the data communication device in response to an inquiry signal from the data communication device.

20

25

20. The image forming device according to claim 15, further comprising a power-supplied portion setting unit setting, in advance, any of a plurality of portions of the image forming device as being power-supplied portions to which the power from the main power source is to be supplied,

wherein the power-source on/off control unit automatically turns on, when the communication request signal is received by the image forming device, the supplying of the power from the main power source to only the power-supplied portions of the image forming device.

21. The image forming device according to claim 20, wherein the power-supplied portion setting unit is configured to receive a power-supplied portion selection signal sent by the data communication device, so that any of the plurality of portions of the image forming device are selected, in advance, in accordance with the power-supplied portion selection signal as being the power-supplied portions, and

the power-source on/off control unit automatically turning on, when the communication request signal is received by the image forming device, the supplying of the power from the main power source to only the power-supplied portions of the image forming

device.

5

22. The image forming device according to claim 20, further comprising a power-supplied portion display unit displaying, on an operation/display portion, power-supplied portion information that indicates which of the portions of the image forming device are set  
10 as being the power-supplied portions.

15

23. The image forming device according to claim 15, wherein the power-source on/off control unit is configured to automatically turn on, when a selecting signal, which is sent by the data communication device and designates the image forming device as a destination device, is received by the image forming device, the  
20 supplying of the power from the main power source to the image forming device.

25

24. An image forming device management method in which a data communication device is connected to one or a plurality of image forming devices and a central control system is connected to the data communication device via a public switched telephone network and provides a remote maintenance of the one or the plurality of image forming devices through the telephone network and the data communication device, comprising the steps of:

transmitting a communication request signal from the data communication device to the image forming device concerned;

10 automatically turning on, when the request signal is received by the image forming device concerned, a supplying of a power from a main power source to the image forming device concerned; and

automatically turning off the supplying of the power from the main power source to the image forming device concerned after a communication between the data communication device and the image forming device concerned ends.

20

25

ABSTRACT OF THE DISCLOSURE

In an image forming device management system and method of the present invention, a data communication device is connected to one or a plurality of image forming devices and a central control  
5 system is connected to the data communication device via a public switched telephone network and provides a remote maintenance of the one or the plurality of image forming devices through the telephone network and the data communication device. A communication request signal is transmitted from the data  
10 communication device to the image forming device concerned. When the request signal is received by the image forming device concerned, a supplying of a power from a main power source to the image forming device concerned is automatically turned on. The supplying of the power from the main power source to the image  
15 forming device concerned is automatically turned off after a communication between the data communication device and the image forming device concerned ends.

20

25

FIG.1

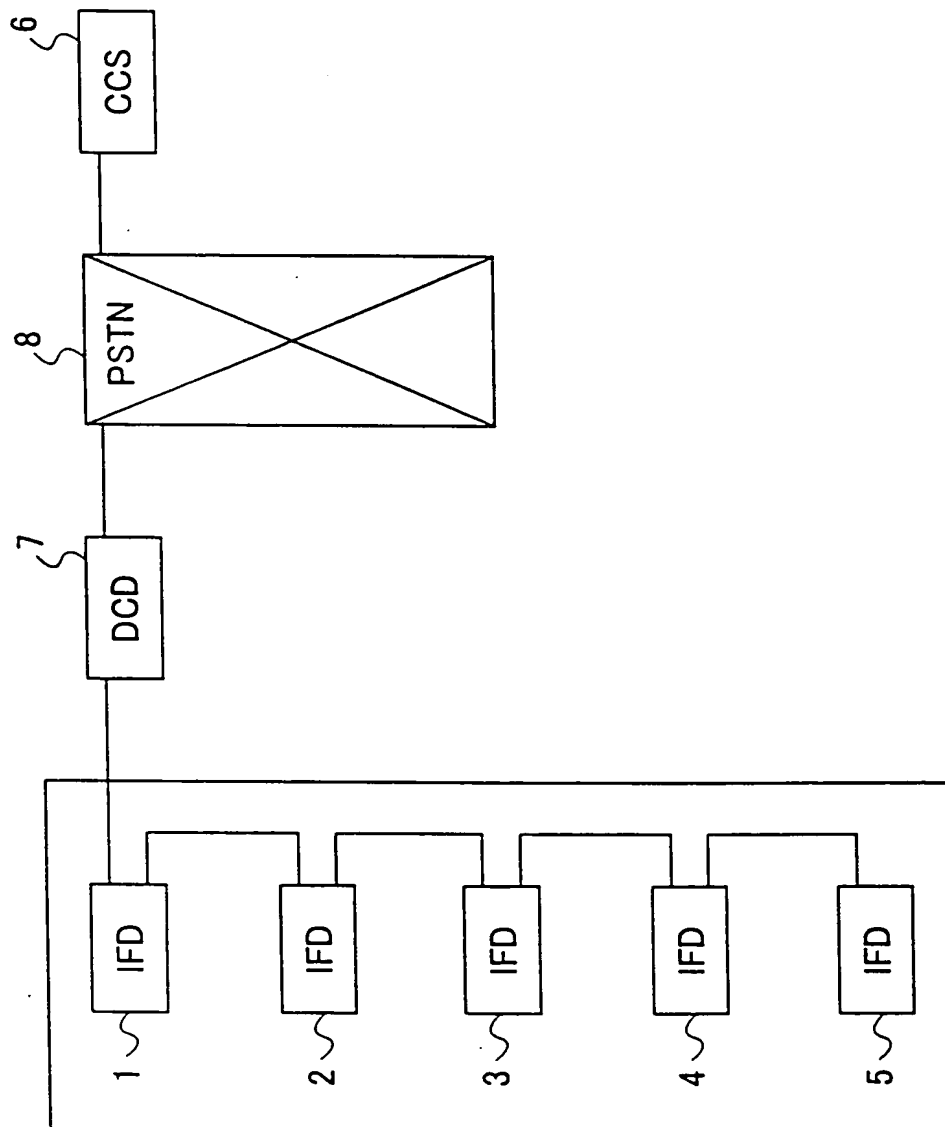


FIG.2

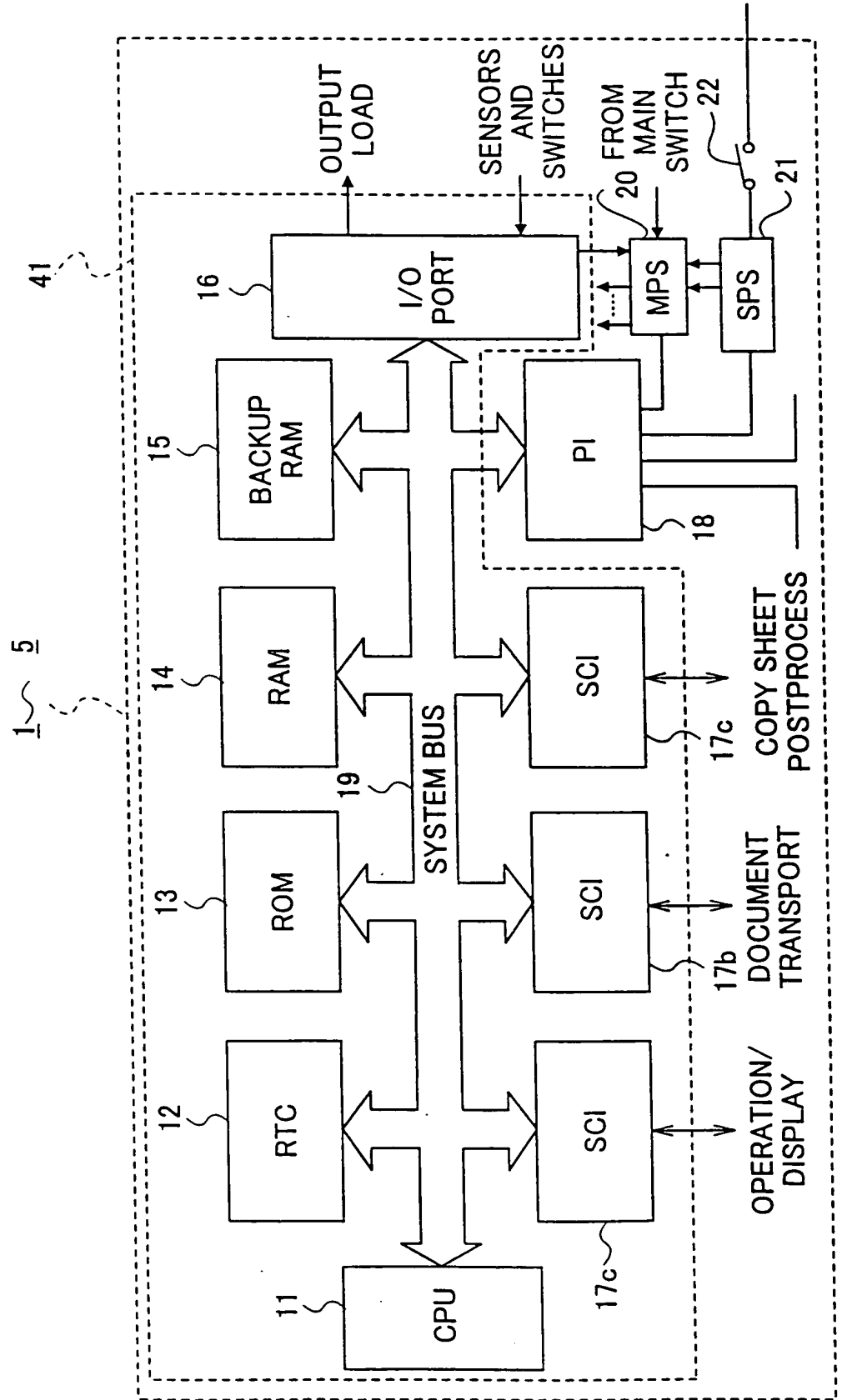




FIG.3

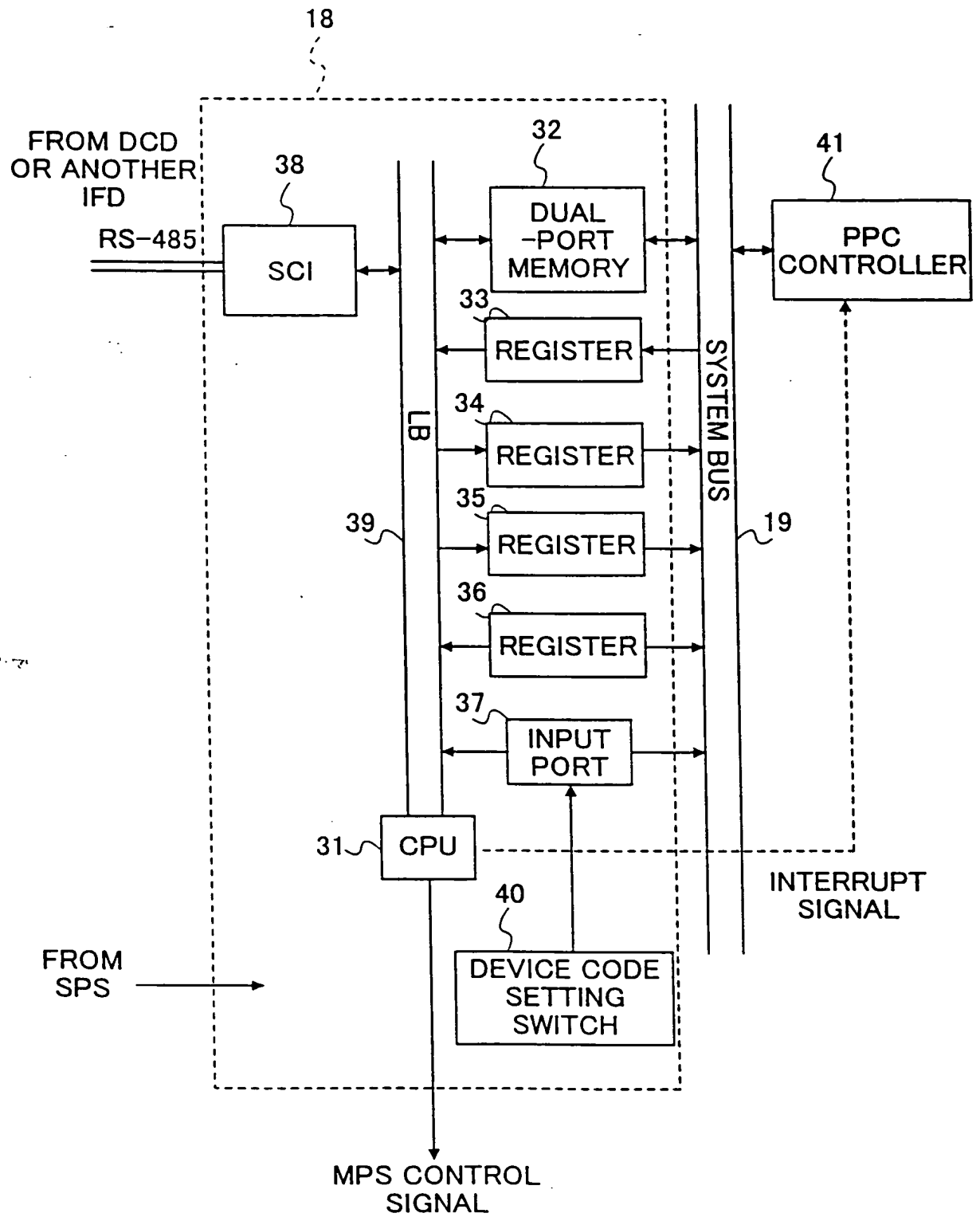


FIG.4

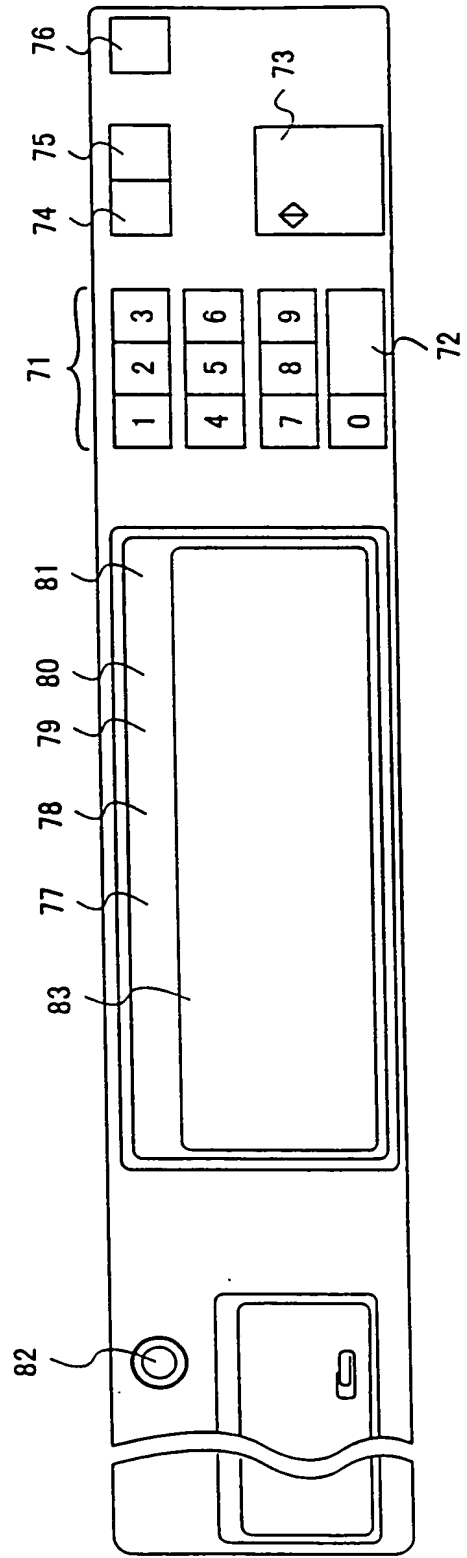


FIG.5

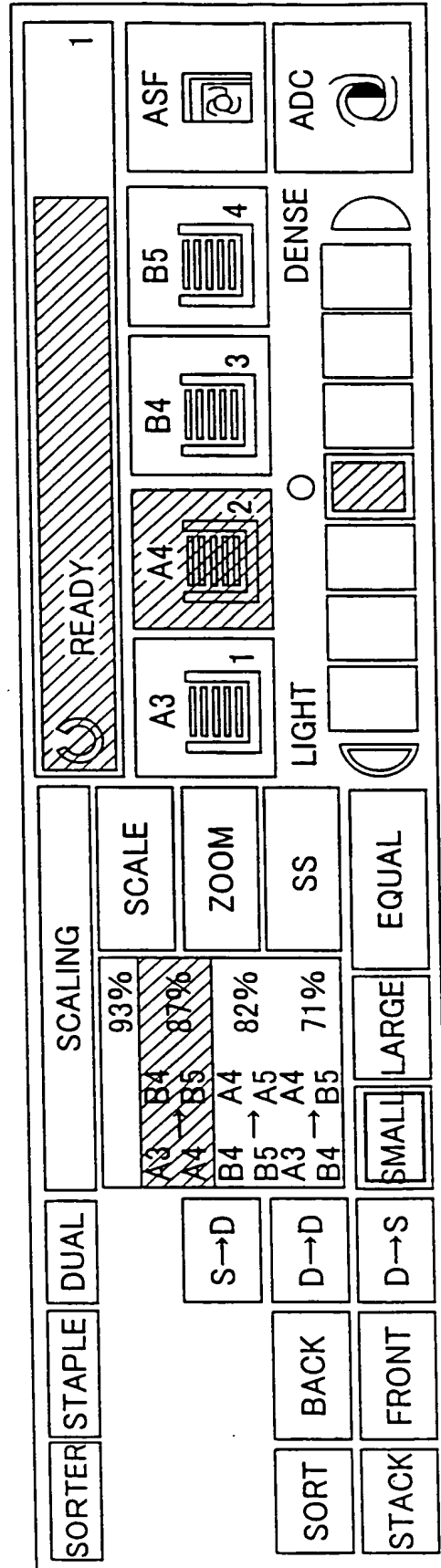


FIG.6

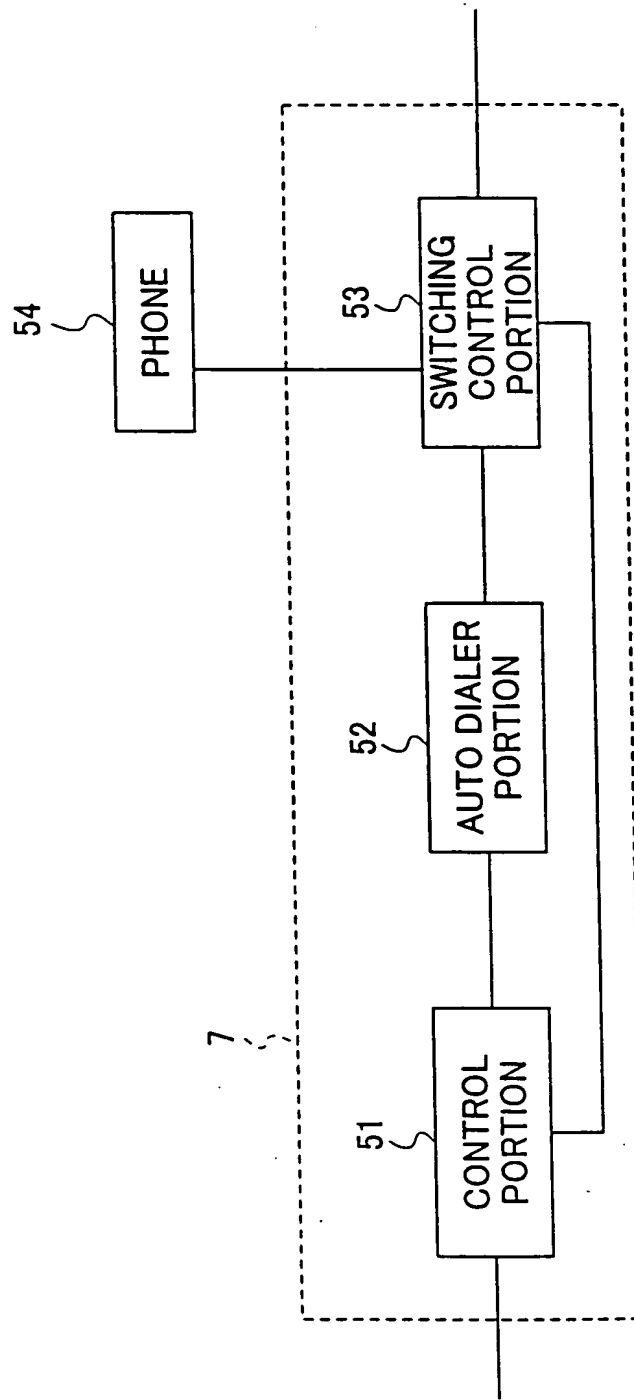


FIG.7

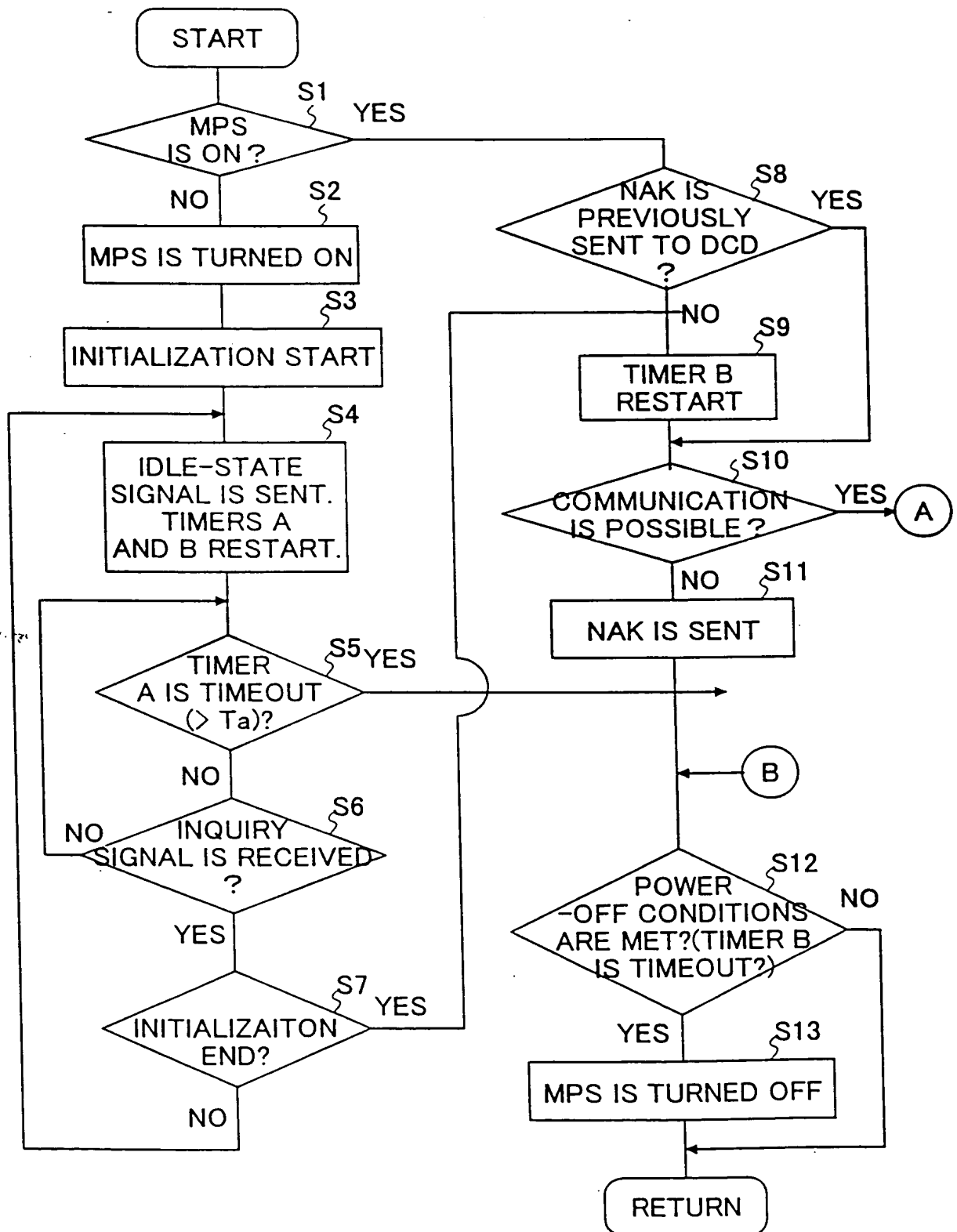


FIG.8

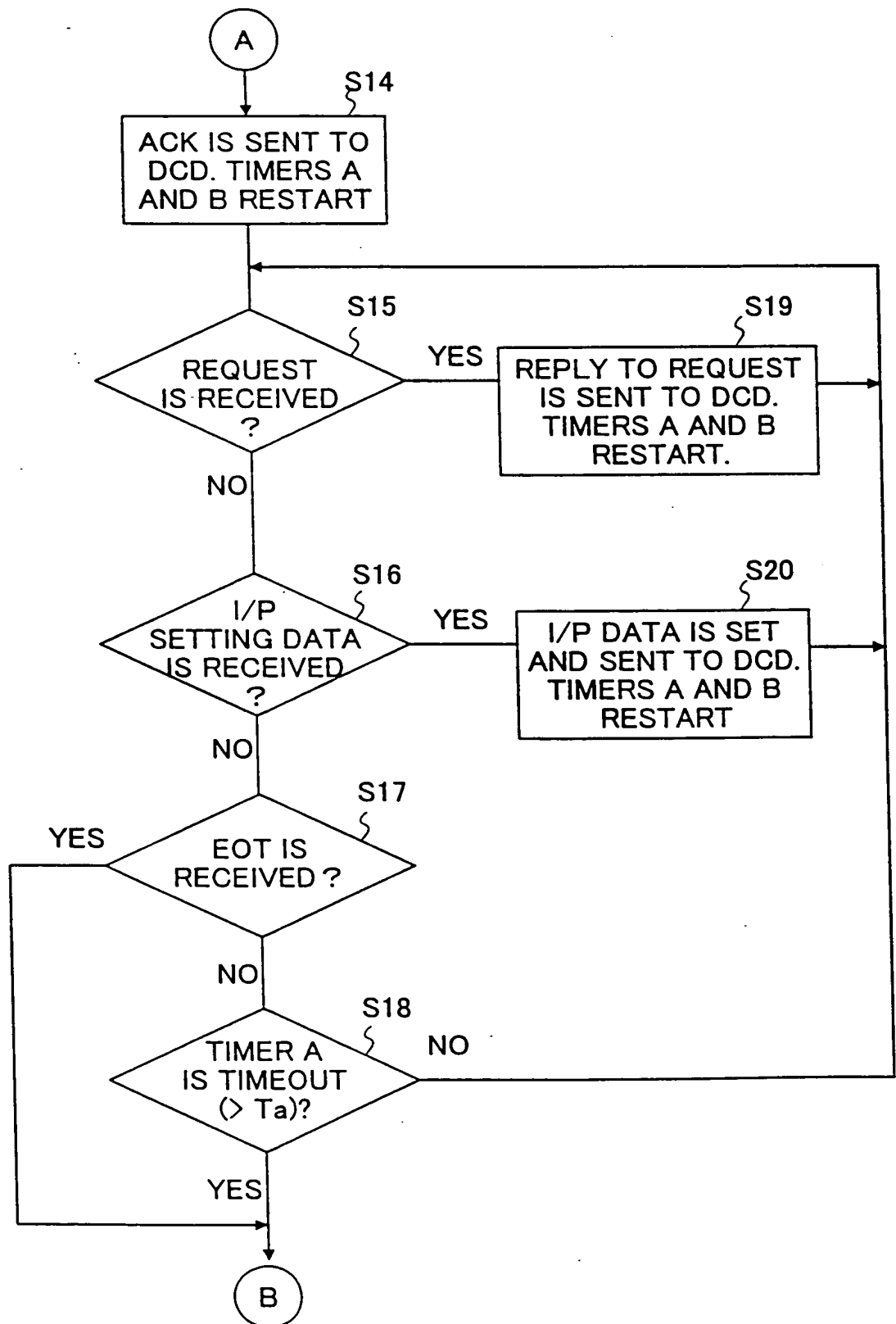


FIG.9

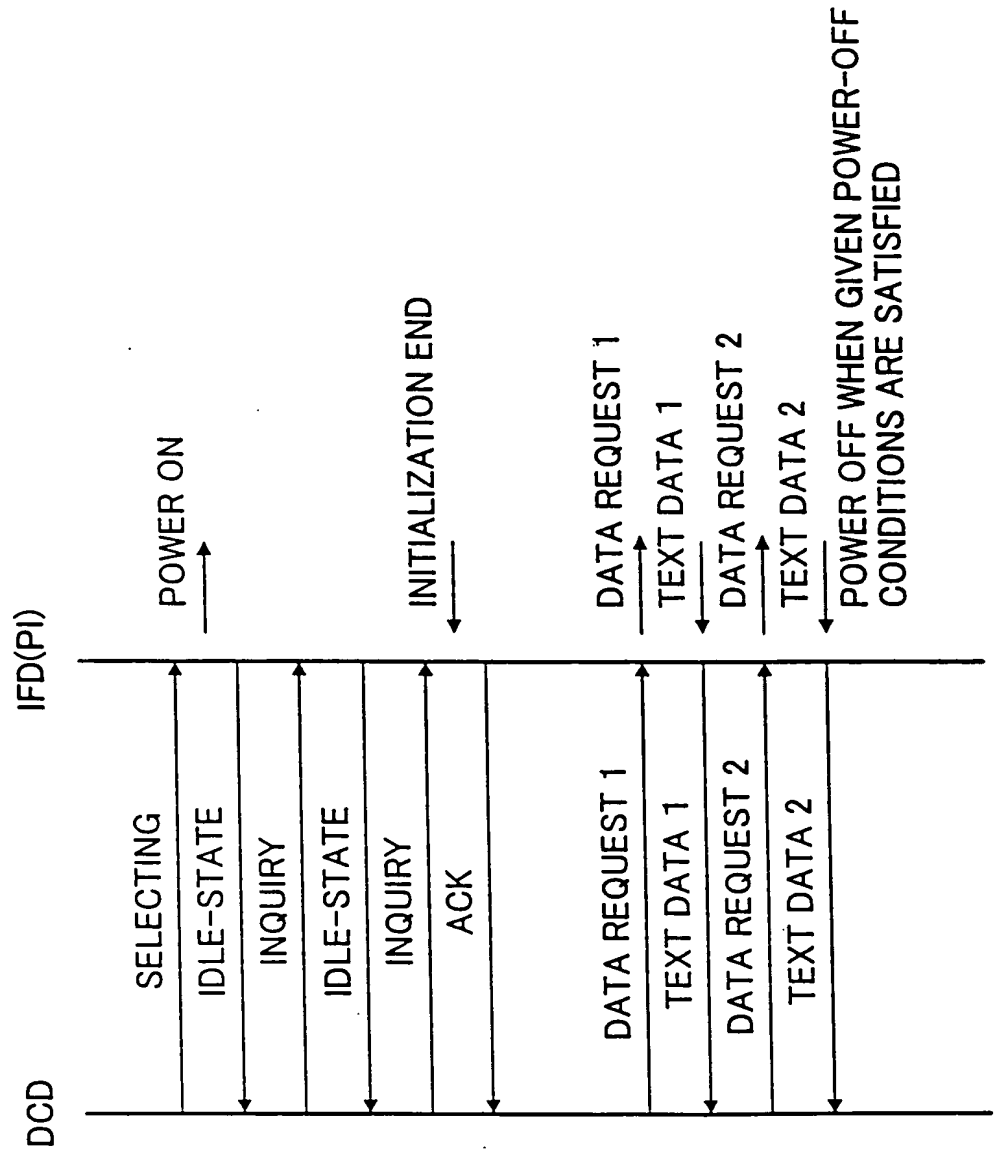


FIG.10

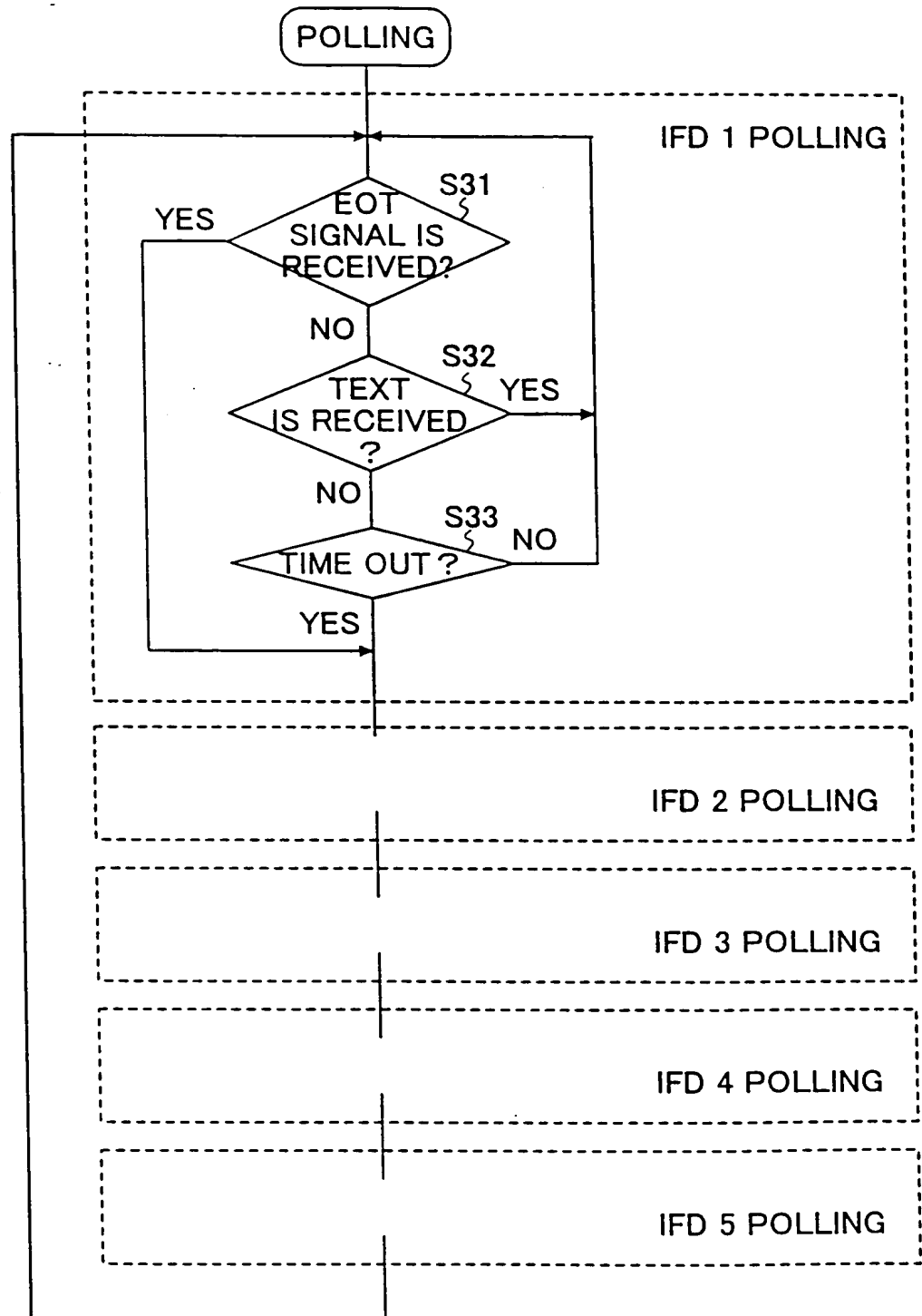




FIG.11

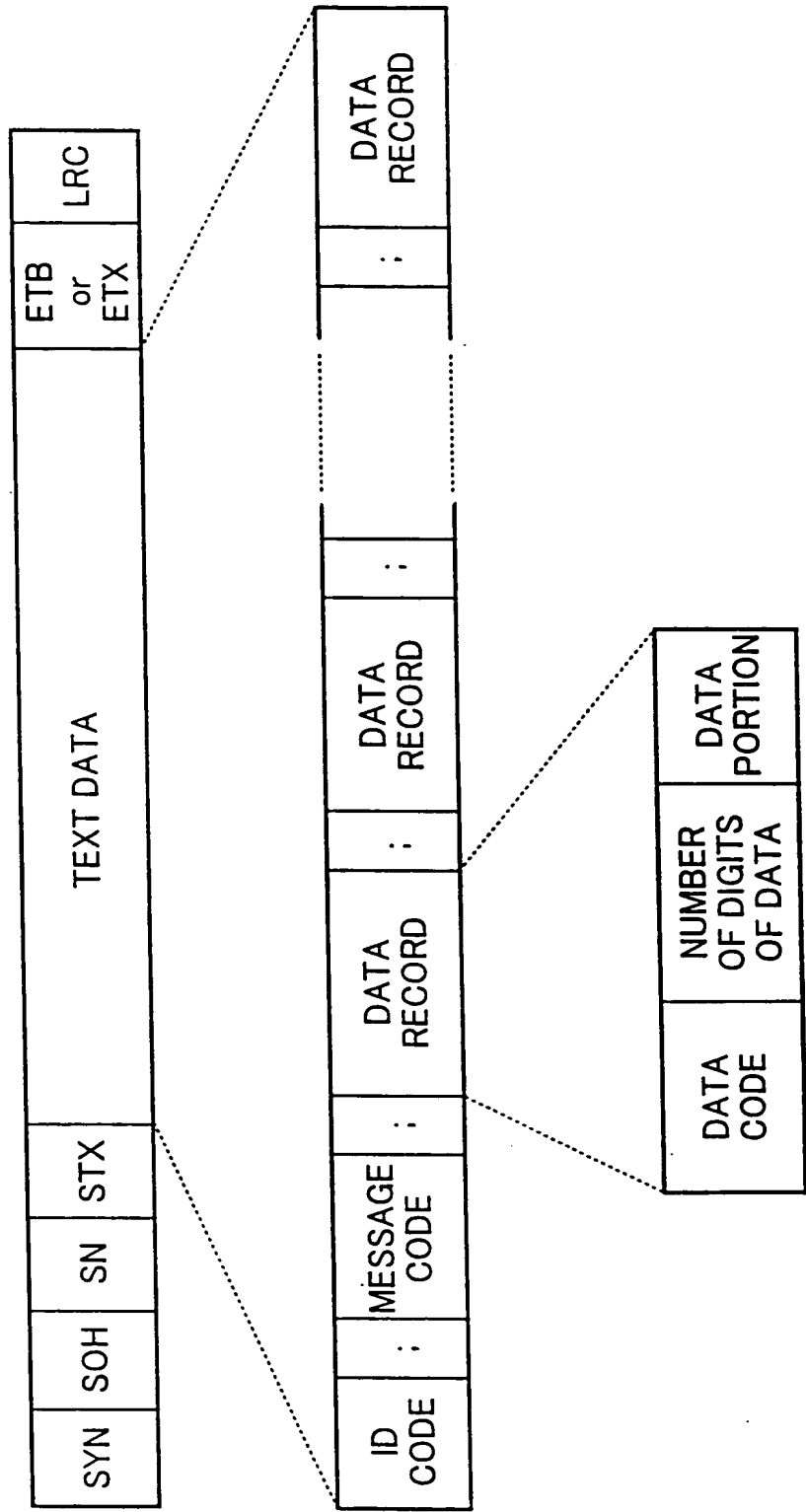


FIG.12

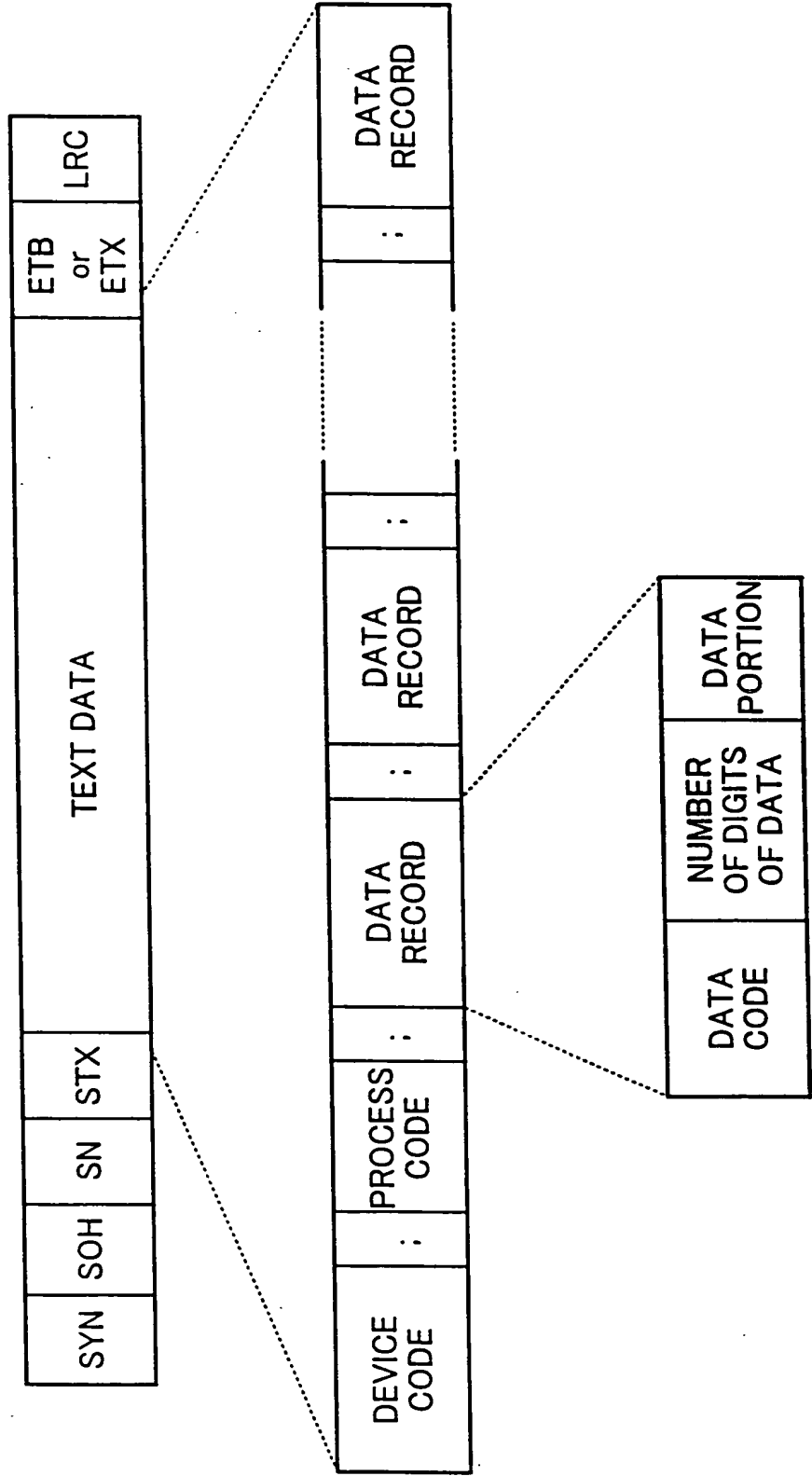
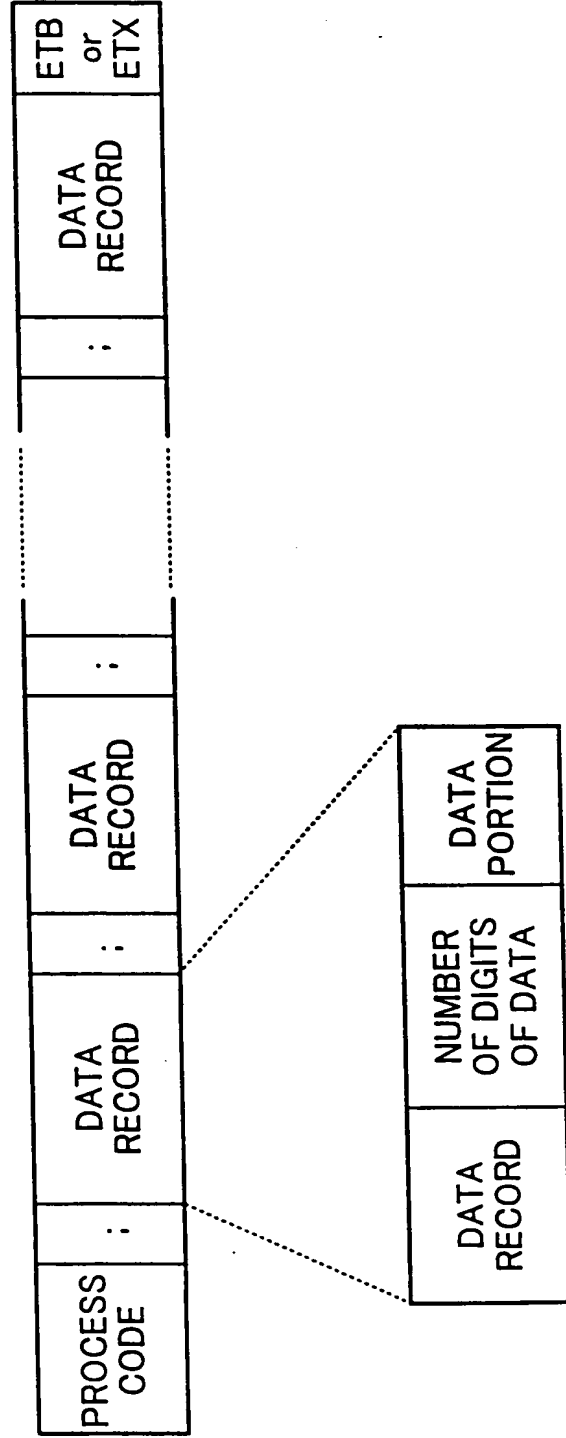
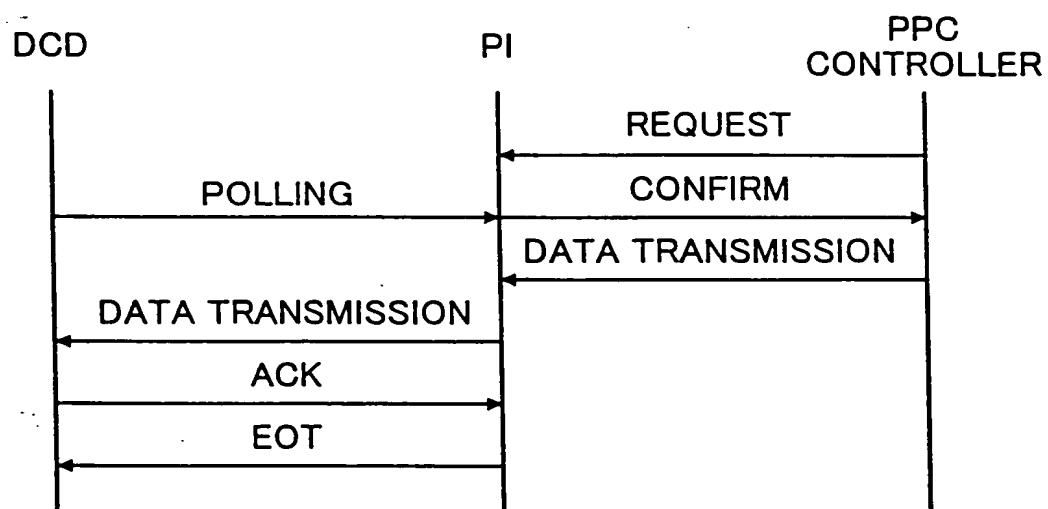


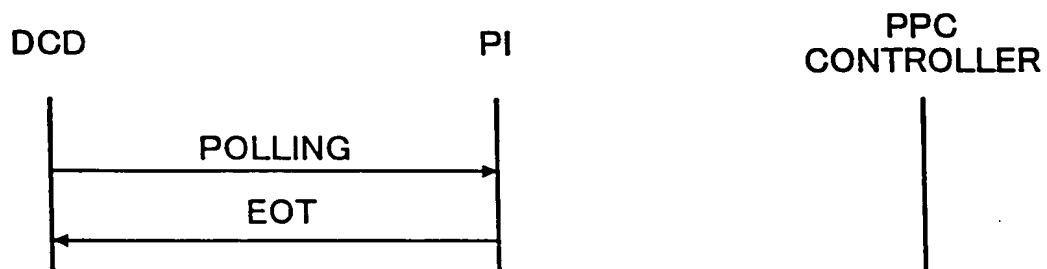
FIG.13



# FIG.14A



# FIG.14B



# FIG.14C

SYN	1	*	EN Q
-----	---	---	---------

SYN: 16H  
 1 : 31H  
 \* : DEVICE CODE (0~V)  
 ENQ: 05H

FIG.15A

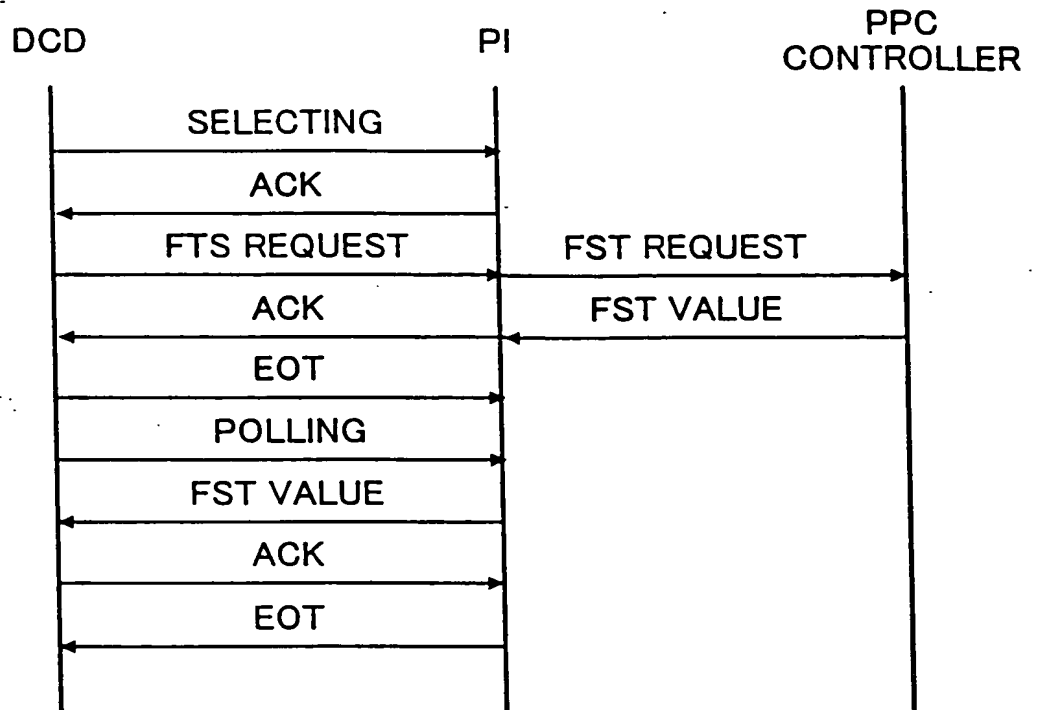
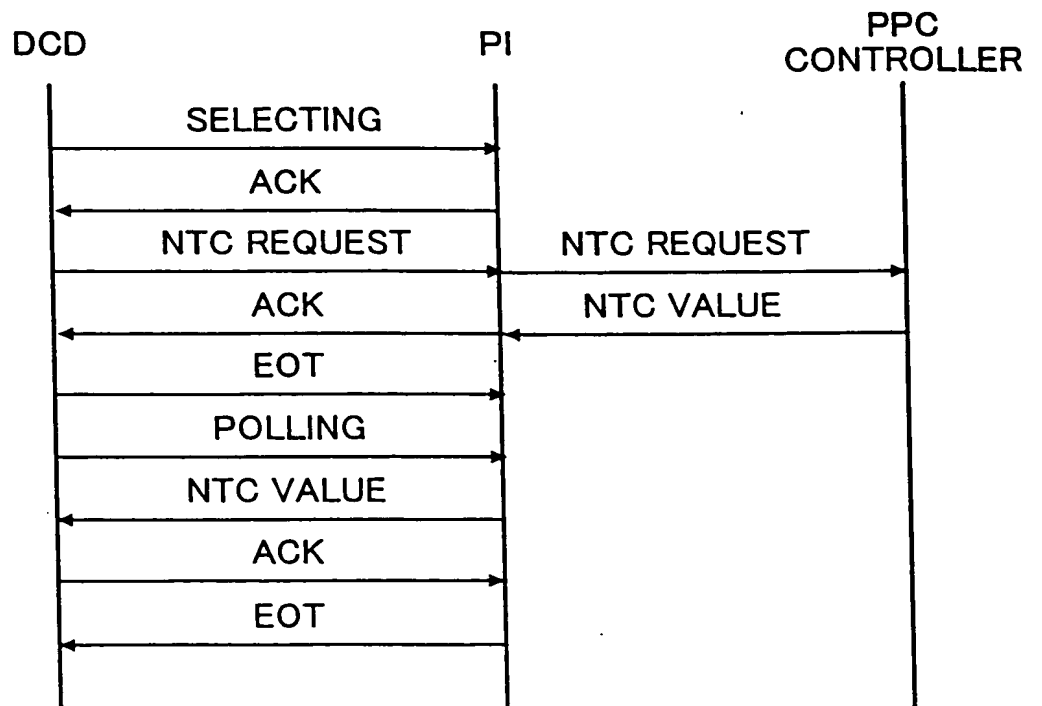
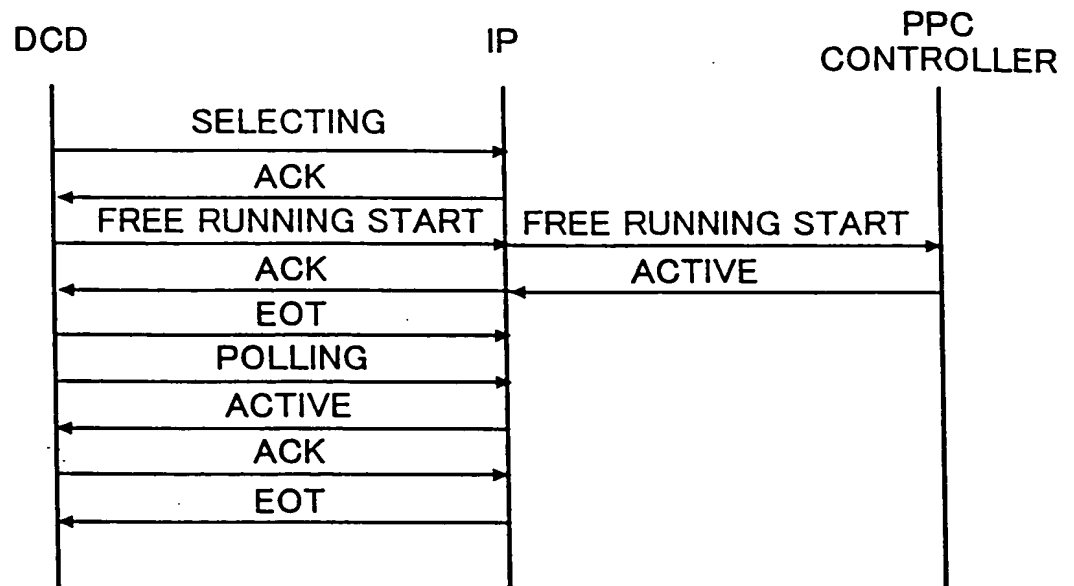


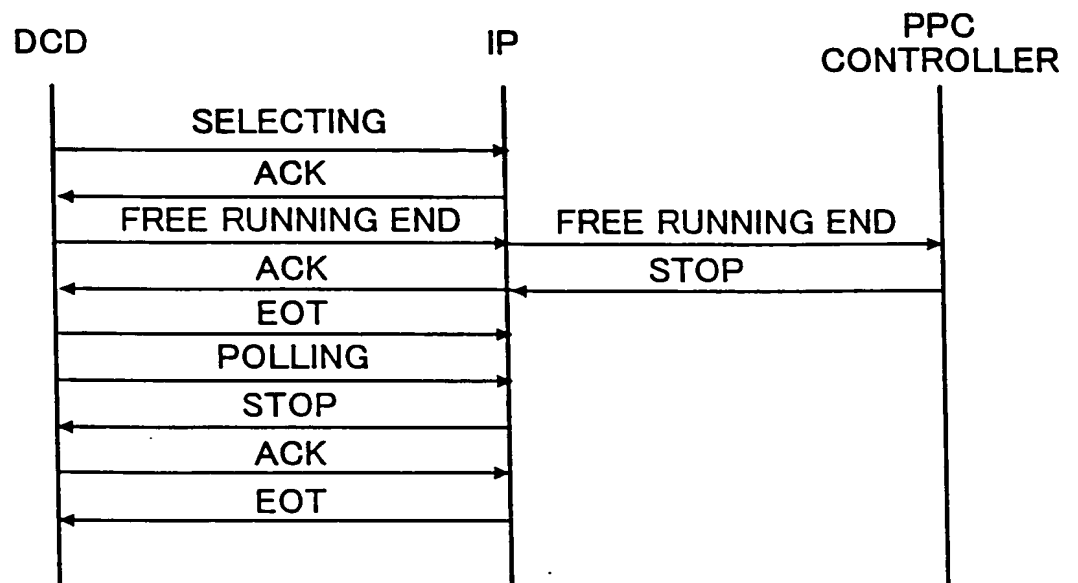
FIG.15B



# FIG.16A



# FIG.16B



# FIG.16C

SYN	2	*	EN Q
-----	---	---	---------

SYN: 16H  
 2 : 32H  
 \* : DEVICE CODE (0~V)  
 ENQ: 05H

FIG.17

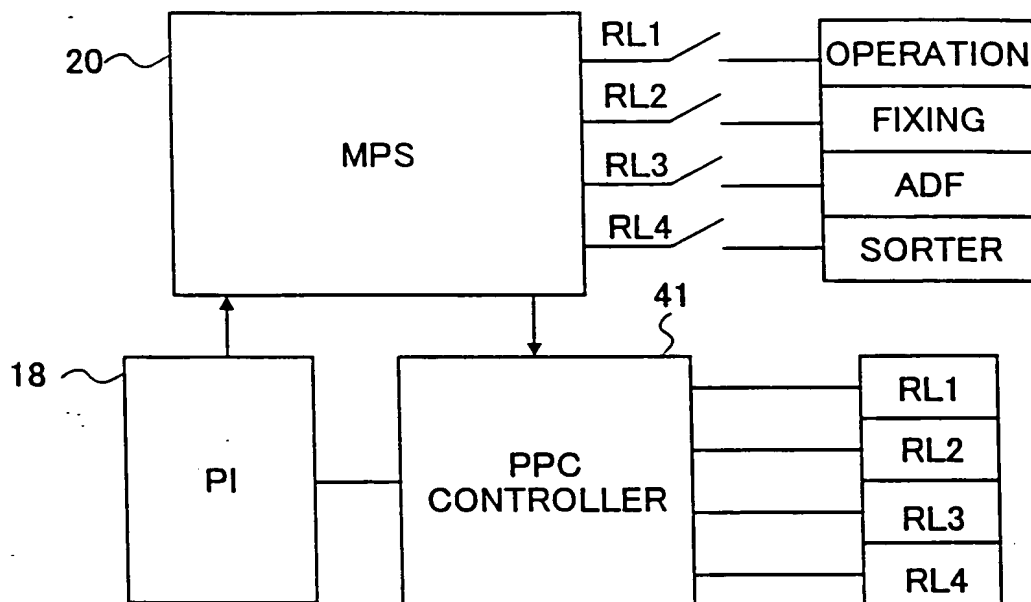


FIG.18

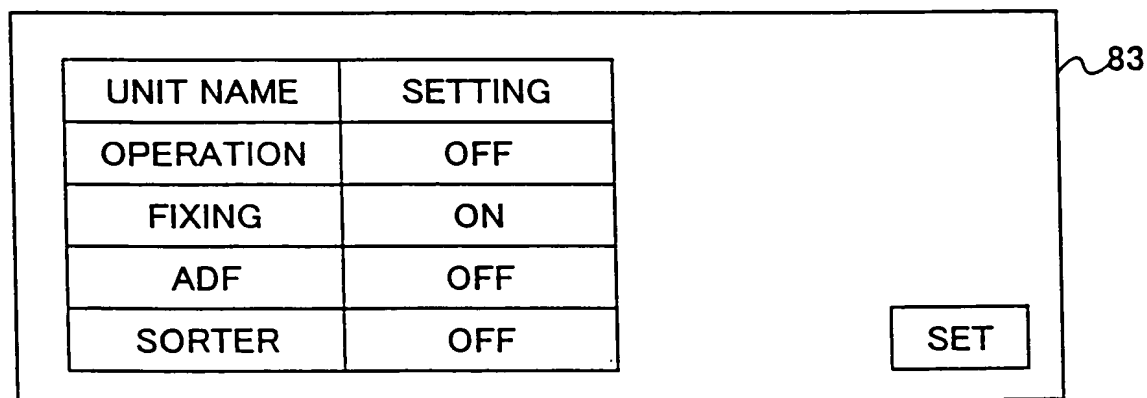


FIG.19

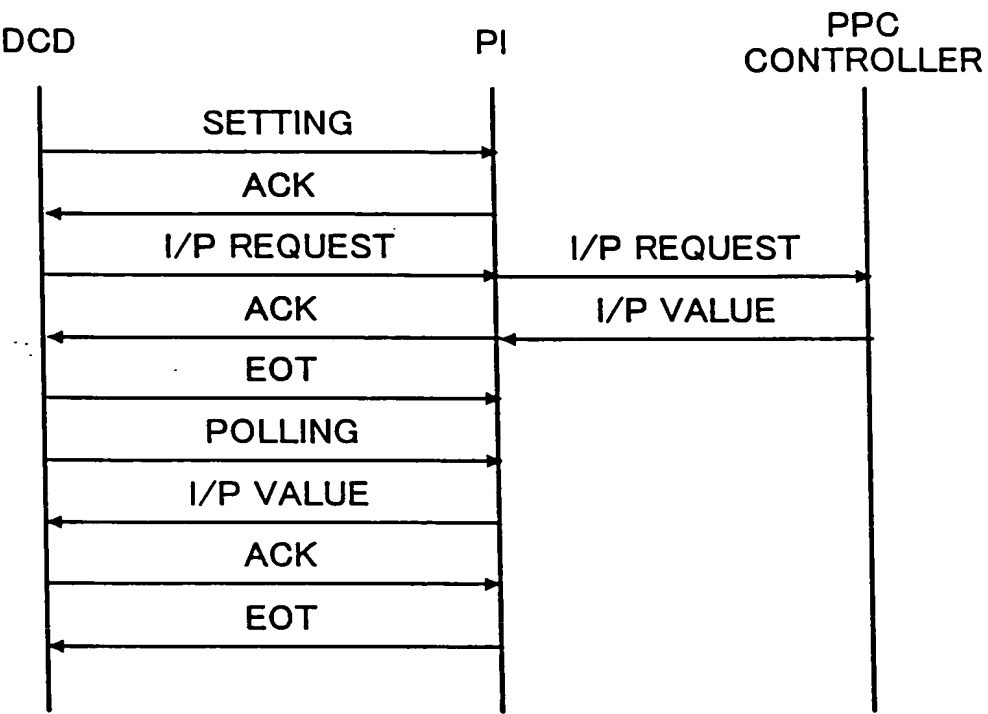


FIG.20

SYN	SOH	SN	STX	P/S PORTION SELECTION INFORMATION	I/P REQUEST INFORMATION (FTS REQUEST)	ETX	LRC
-----	-----	----	-----	---	---	-----	-----



FIG.21A

BIT	P/S PORTION SELECTION INFORMATION	REMARKS
0	OPERATION 1;ON,0;OFF	
1	FIXING 1;ON,0;OFF	
2	ADF 1;ON,0;OFF	
3	SORTER 1;ON,0;OFF	
4		
5		
6		
7		

FIG.21B

I/P REQUEST INFORMATION (FTS REQUEST)	REMARKS
5101105020000	

FIG.22

SYN	SOH	SN	STX	P/S PORTION SELECTION INFORMATION	ETX	LRC
-----	-----	----	-----	---	-----	-----